

LISTING OF CLAIMS:

1. (Currently amended) A silicon carbide semiconductor device comprising:

~~a silicon carbide substrate that is provided with an off oriented {0001} surface whose off axis direction is <11-20>; and~~

~~a trench that is formed on the silicon carbide substrate and has a stripe structure extending toward a <11-20> direction;~~

~~wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench~~

a silicon carbide substrate having a top surface that is a {0001} plane having an off angle,
wherein an off-axis direction of the off angle is <11-20>; and

a trench that is formed on the top surface of the silicon carbide substrate and has a stripe structure extending toward a <11-20> direction of the top surface of the silicon carbide substrate,
wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench.

2. (Currently amended) A silicon carbide semiconductor device comprising:

~~a silicon carbide substrate that is provided with an off oriented {0001} surface whose off axis direction is <1-100>; and~~

~~a trench that is formed on the silicon carbide substrate and has a stripe structure extending toward a <1-100> direction;~~

~~wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench~~

a silicon carbide substrate having a top surface that is a {0001} plane having an off angle,
wherein an off-axis direction of the off angle is <1-100>; and

a trench that is formed on the top surface of the silicon carbide substrate and has a stripe structure extending toward a <1-100> direction of the top surface of the silicon carbide substrate, wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench.

3. (Currently amended) A silicon carbide semiconductor device comprising:

~~a silicon carbide substrate that is provided with an off oriented {0001} surface whose off axis direction is <11-20>; and~~

~~a trench that is formed on the silicon carbide substrate and has a side wall of a {1-100} surface,~~

a silicon carbide substrate having a top surface that is in a {0001} plane having an off angle, wherein an off-axis direction of the off angle is <11-20>; and

a trench that is formed on the top surface of the silicon carbide substrate, wherein the trench has a side wall having a surface that is in a {1-100} plane,

wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench.

4. (Currently amended) A silicon carbide semiconductor device comprising:

~~a silicon carbide substrate that is provided with an off oriented {0001} surface whose off axis direction is <1-100>; and~~

~~a trench that is formed on the silicon carbide substrate and has a side wall of a {11-20} surface,~~

a silicon carbide substrate having a top surface that is in a {0001} plane having an off angle, wherein an off-axis direction of the off angle is <1-100>; and

a trench that is formed on the top surface of the silicon carbide substrate, wherein the trench has a side wall having a surface that is in a {11-20} plane,

wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench.

5. (Currently amended) A silicon carbide semiconductor device comprising:

~~a silicon carbide substrate that is provided with an off oriented surface having a certain off axis direction; and~~

~~a trench that is formed on the silicon carbide substrate, wherein each side of a planar structure of the trench is at an angle of 80 degrees or less with respect to the certain off axis direction,~~

a silicon carbide substrate having a top surface that is in a plane having an off angle, wherein an off-axis direction of the off angle is a certain direction; and

a trench that is formed on the top surface of the silicon carbide substrate, wherein the trench has a planar structure, wherein each side of the planar structure is at an angle of 80 degrees or less with respect to the certain direction,

wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench.

6. (Currently amended) A silicon carbide semiconductor device comprising:

~~a silicon carbide substrate that is provided with an off oriented surface having a certain off axis direction; and~~

~~a trench that is formed on the silicon carbide substrate, wherein each side of a planar structure of the trench is at an angle of 75 degrees or less with respect to the certain off axis direction,~~

a silicon carbide substrate having a top surface that is in a plane having an off angle, wherein an off-axis direction of the off angle is a certain direction; and

a trench that is formed on the top surface of the silicon carbide substrate, wherein the trench has a planar structure, wherein each side of the planar structure is at an angle of 75 degrees or less with respect to the certain direction,

wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench.

7. (Currently amended) A silicon carbide semiconductor device comprising:

~~a silicon carbide substrate that is provided with an off oriented {0001} surface whose off axis direction is <11-20>; and~~

~~a trench that is formed on the silicon carbide substrate and has a side wall of a {11-20} surface that is not perpendicular to the off axis,~~

a silicon carbide substrate having a top surface that is in a {0001} plane having an off angle, wherein an off-axis direction of the off angle is <11-20>; and

a trench that is formed on the top surface of the silicon carbide substrate, wherein the trench has a side wall having a surface that is in a {11-20} plane and is not perpendicular to the off-axis direction,

wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench.

8. (Currently amended) A silicon carbide semiconductor device comprising:

~~a silicon carbide substrate that is provided with an off oriented {0001} surface whose off axis direction is <1-100>; and~~

~~a trench that is formed on the silicon carbide substrate and has a side wall of a {1-100} surface that is not perpendicular to the off axis,~~

a trench that is formed on the top surface of the silicon carbide substrate, wherein the trench has a side wall having a surface that is in a {1-100} plane and is not perpendicular to the off-axis direction,

wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench.

9. (Currently amended) A silicon carbide semiconductor device comprising:

a silicon carbide substrate ~~being that is~~ a hexagonal crystal silicon carbide substrate having a top surface that is in a {11-20} main surface plane; and

a trench that is formed on the top surface of the silicon carbide substrate, wherein the trench and has a side wall of being slant that is inclined at an angle of one degree or more with respect to a {0001} plane in a sectional structure virtual cross-sectional view that is perpendicular to the top surface of the silicon carbide substrate,

wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench.

10. (Currently amended) A silicon carbide semiconductor device comprising:

a silicon carbide substrate being a hexagonal crystal silicon carbide substrate having a top surface that is in a {1-100} main surface plane; and

a trench that is formed on the top surface of the silicon carbide substrate and has a side wall ~~of being slant that is inclined~~ at an angle of one degree or more with respect to a {0001} plane in ~~a sectional structure~~ virtual cross-sectional view that is perpendicular to the top surface of the silicon carbide substrate,

wherein a silicon carbide epitaxial layer is formed on an inside surface of the trench.